Erosion and Sediment Control Plan for a Timber Harvesting Operation

1. GENERAL INFORMATION

Date

A. Location _____ (Municipality) _____ (County)

B. Timber sale area = _____ acres

C. Landowner _____ (Name) _____ (Home Phone) (Work Phone)

_____ (Street Address)

_____ (City) (State) (Zip Code) _____ (Signature of Landowner)

D. Person(s) responsible for construction and maintenance of erosion and sediment control BMPs during earth disturbance activities. (NOTE: If duties are assigned to more than one party, list all others under Section 12 of this plan.)

_____ (Name) _____ (Home Phone) (Work Phone)

_____ (Street Address)

_____ (City) (State) (Zip Code) _____ (Signature of person(s) responsible)

E. Erosion and Sediment Control Plan prepared by:

_____ (Name) Phone _____

_____ (Street Address)

_____ (City) (State) (Zip Code) _____ (Signature of Plan Preparer)

2. TOPOGRAPHICAL MAP

The map must include the location of the project with respect to roadways, streams, wetlands, lakes, ponds, floodplains, type and extent of vegetation and other identifiable landmarks. A United States Geologic Service (USGS) quadrangle map may be used to show the existing topographical features of the project site and the immediate surrounding area. The map scale site must be large enough to clearly depict the topographical features of the project. Enlargements of the USGS quadrangle map are sufficient.

The scale and north arrow must be plainly marked. A complete legend of all symbols used on the map must also be included.

3. SOIL MAP

Soils information is available in soil survey reports, published by the USDA Natural Resource Conservation Service in cooperation with Penn State University, College of Agriculture and others. These reports are available for review at the county conservation district offices.

The soils drainage classes must be examined to determine areas with the best drainage for the placement of haul roads and log landings, and to determine proper retirement treatments.

Provide the following soils information for all disturbed areas.

		Limiting Characteristics[1] That May Apply to Timber Harvesting Activities (Check as Appropriate)		
		Erosion Hazards[2]		
Map Symbols	Soil Series	Slight	Moderate, severe	Seasonably Wet[3]
		☐	☐	☐
		☐	☐	☐
		☐	☐	☐
		☐	☐	☐
		☐	☐	☐

[1] Soils with a moderate or severe erosion hazard or seasonably wet are poor choices for log landing and road locations, and, if possible, alternatives should be considered.

[2] The degree or ease by which soil particles can be detached from the soil surface. Moderate or severe ratings require additional consideration of soil erosion and sediment control BMPs during logging and road construction.

[3] Somewhat poorly drained soils remain wet for a longer period after rain and would be susceptible to disturbance. These soils may be hydric, indicating a possible wetland. They may have to be logged during dry seasons, when the profile may be relatively dry, or when the soils are frozen. They are poor choices for log landing and road locations, and, if possible, alternate areas should be considered.

4. SKETCH MAP

The characteristics of the earth disturbance activity. The limits of the harvesting area must be shown on a map(s). Such information as the limits of clearing and grubbing and the areas of cuts and fills for roads and landings, and other proposed disturbances for the timber harvesting area are to be included. Roads, skid roads and landings located within 50 ft. of a stream bank may require a Department Chapter 105 Water Obstruction and Encroachment. The following should be clearly shown on the sketch map:

- Dimensions
- North Arrow
- Landings
- Haul Roads
- Skid Roads
- Wetland Crossings
- Stream Crossings
- Equipment Maintenance/Fueling Areas
- Existing Roads

5. RUNOFF

The amount of runoff from the timber harvest area and its upstream watershed area. You do not have to provide runoff calculations unless you plan to use BMPs different from those described in Section 8. If you use different BMPs, your calculations must include an analysis showing any impact that runoff may have on existing downstream watercourses and their resistance to erosion.

6. RECEIVING WATERS

All streams in Pennsylvania are classified based upon their designated and existing uses and water quality criteria. Designated uses for waters of this Commonwealth are found in 25 Pa. Code §93.9a-z at http://www.pacode.com/secure/data/025/chapter93/chap93toc.html. Existing uses of waters of this Commonwealth are found at the DEP Web site www.depweb.state.pa.us. Type the phrase "existing use" in the DEP Keyword box. The county conservation district office can also supply this information. List the bodies of water likely to receive direct runoff within or from the timber harvest area.

Name	Designated/Existing Use

7. ESTIMATED DISTURBED AREA

	Total Length (ft)	Average Width (ft)		Area (sq ft)
Haul Roads			=	
Skid Roads			=	
Landings			=	

Total Area (sq. ft.) = _____ ÷ 43,560 sq ft/A = _____

Acres disturbed by earth disturbance activities.

If the total area of earth disturbance activities (sum of area disturbed by haul roads, skid roads and landings) consists of 25 acres or more, an Erosion and Sediment Control Permit must be obtained.

Has application been made for required stream crossing permits? Yes ☐ No ☐ Not Applicable ☐

At all stream crossing locations, runoff must be directed to a sediment removal area, i.e., filter strip, straw bale, silt fence, sump, a trap for treatment. Waterbars and/or broad based dips should be installed and maintained as required on the approaches to the stream crossing.

8. DESCRIPTION OF EROSION AND SEDIMENT CONTROL MEASURES

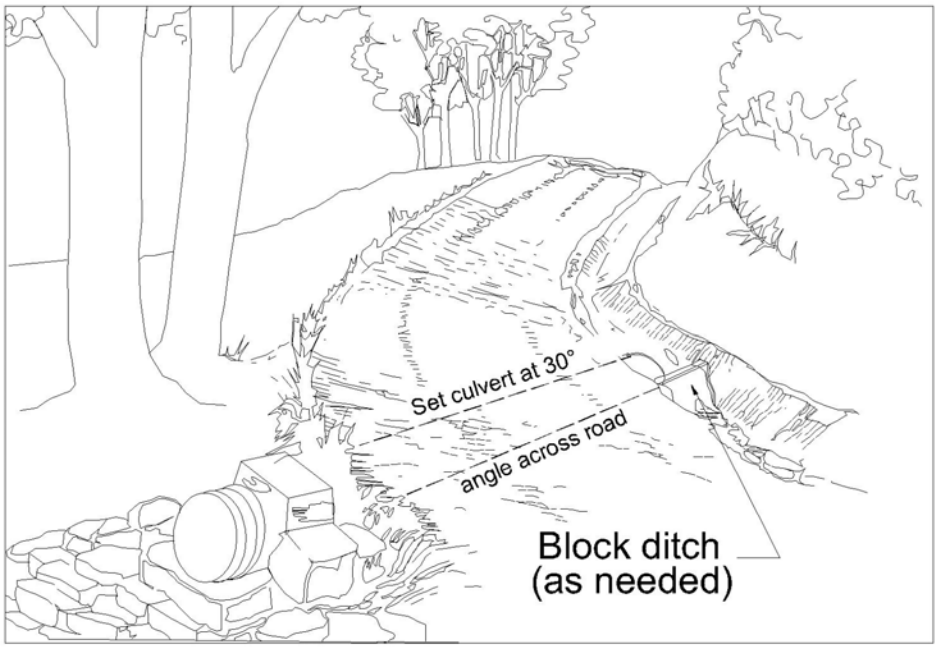
The following standard BMP drawings and recommended spacings (Sections A-H) have been provided to fulfill the requirements of this plan. If you plan to use any of these recommended BMPs, please check the appropriate boxes for Sections A through H. If you plan to use alternative BMPs, you must provide drawings showing the details, specifications and spacing.

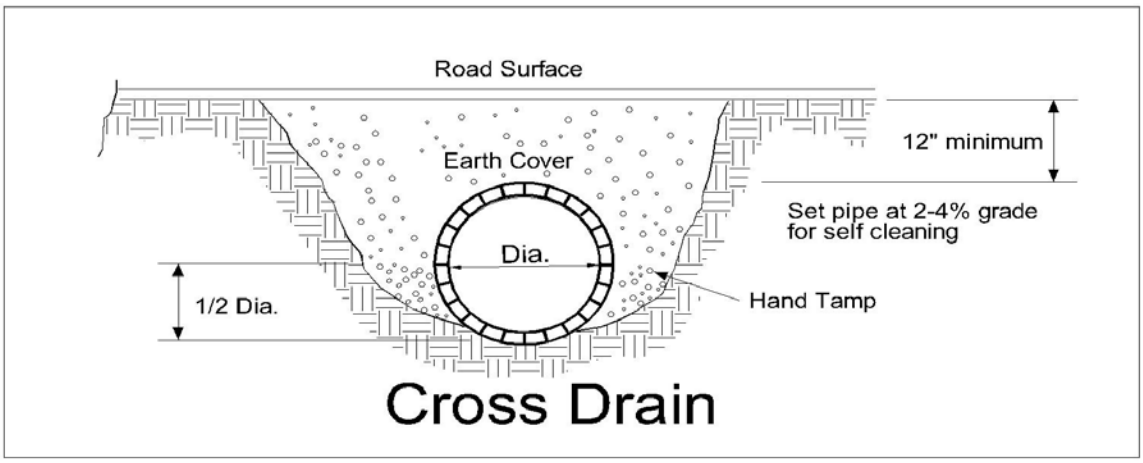
A. Cross-drain culvert

Culverts will be installed before the ground freezes. Culverts shall be placed with a slope of 2 to 4 percent and cross the road at a 30-degree downslope angle. Recommend 12" pipe or larger culverts. Will this BMP be used? ☐ Yes ☐ No Will recommended spacing be used? ☐ Yes ☐ No

Road Grade (% Slope)	Recommended Spacing (feet)	Alternative Spacing* (feet)
2	500	_____
3	400	_____
4	350	_____
5-6	300	_____
7-8	250	_____
9-11	200	_____
12-13	150	_____
14+	100	_____

*If alternative spacings are used, please make sure reasons for their use are explained.





B. Waterbars

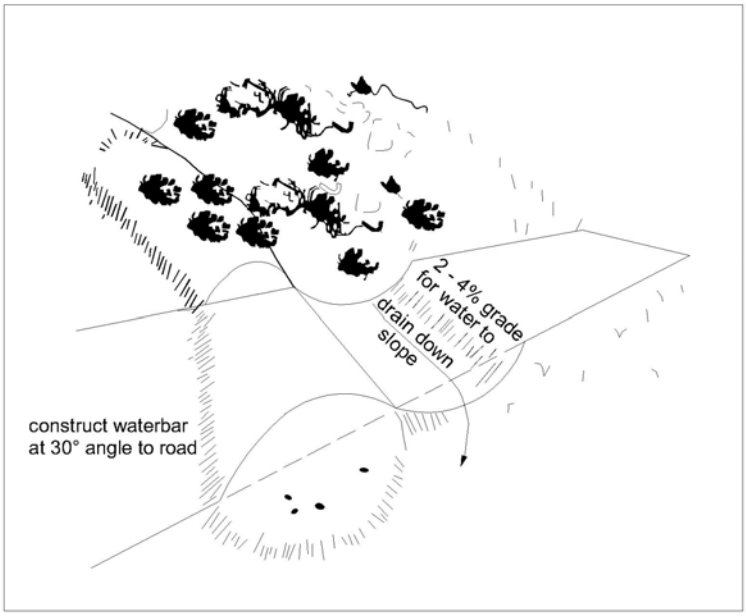
Waterbars on skid roads will be maintained throughout the entire job and installed permanently upon job completion.

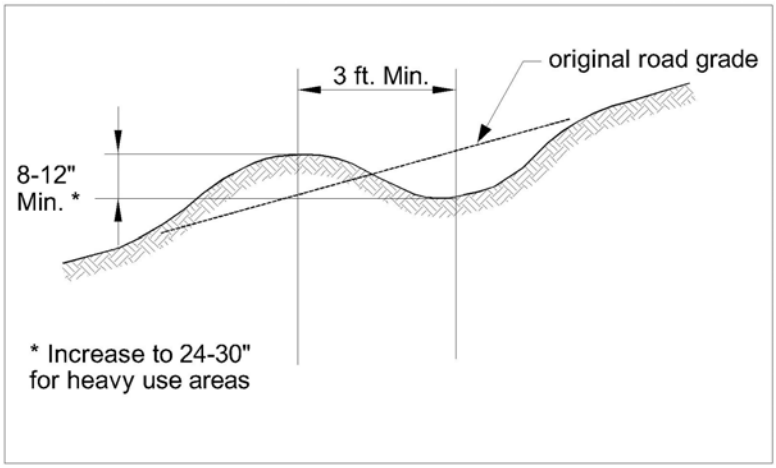
Waterbars will be installed before the ground freezes and will be spaced as indicated below.

Will this BMP be used? ☐ Yes ☐ No Will recommended spacing be used? ☐ Yes ☐ No

Road Grade (% Slope)	Recommended Spacing (feet)	Alternative Spacing* (feet)
2	250	
5	135	
10	80	
15	60	
20	45	
25	40	
30	35	
40	30	

*If longer spacings are used, please make sure reasons for their use are explained.





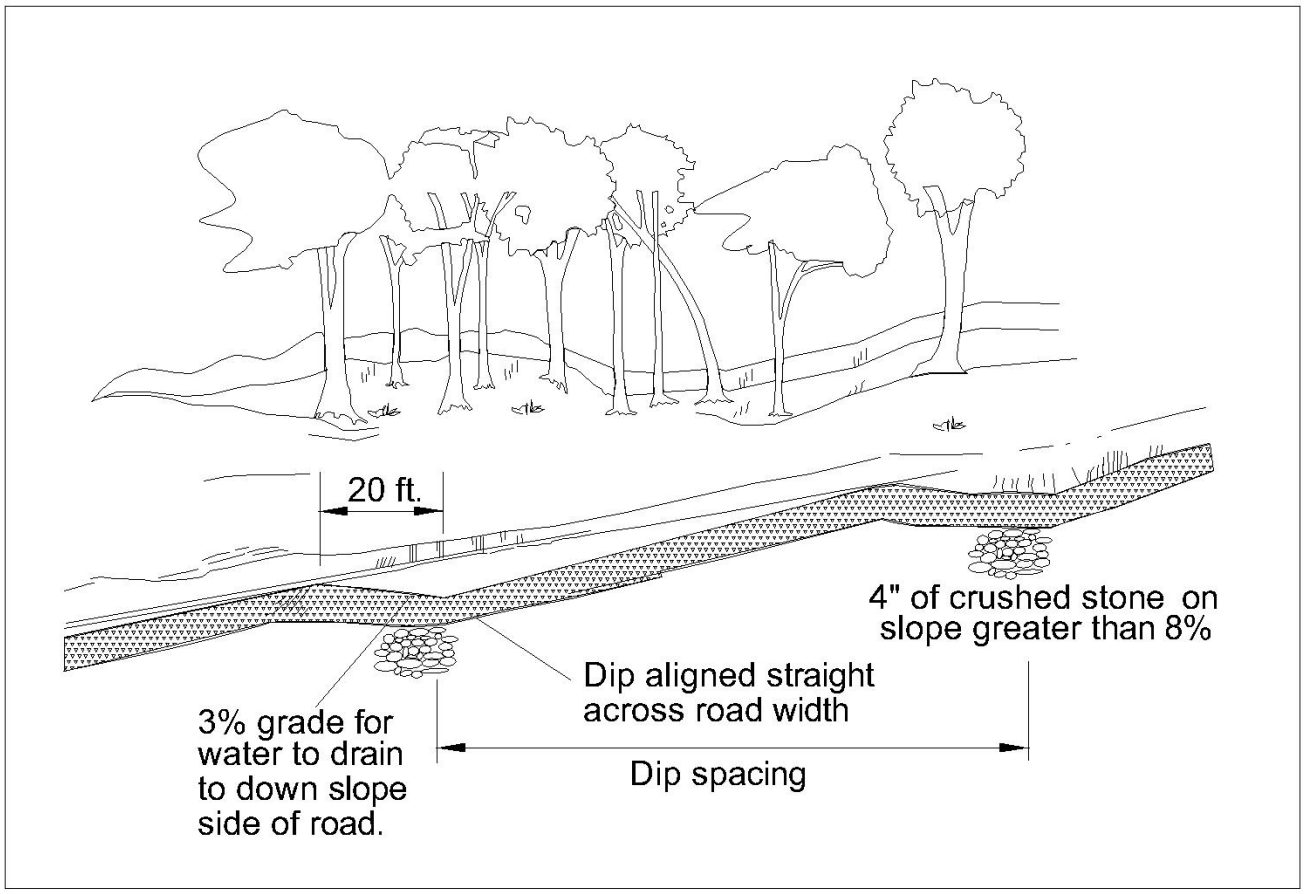
C. Broad-based dips

Broad-based dips will be installed and worked before the ground freezes. Broad-based dips on the road system are planned to be spaced as indicated below.

Will this BMP be used? ☐ Yes ☐ No Will recommended spacing be used? ☐ Yes ☐ No

Road Grade (% Slope)	Recommended Spacing (feet)	Alternative Spacing* (feet)
2	300	
3	250	
4	200	
5	180	
6	170	
7	160	
8	150	
9-10	140	

*If longer spacings are used, please make sure reasons for their use are explained.



D. Filter strips

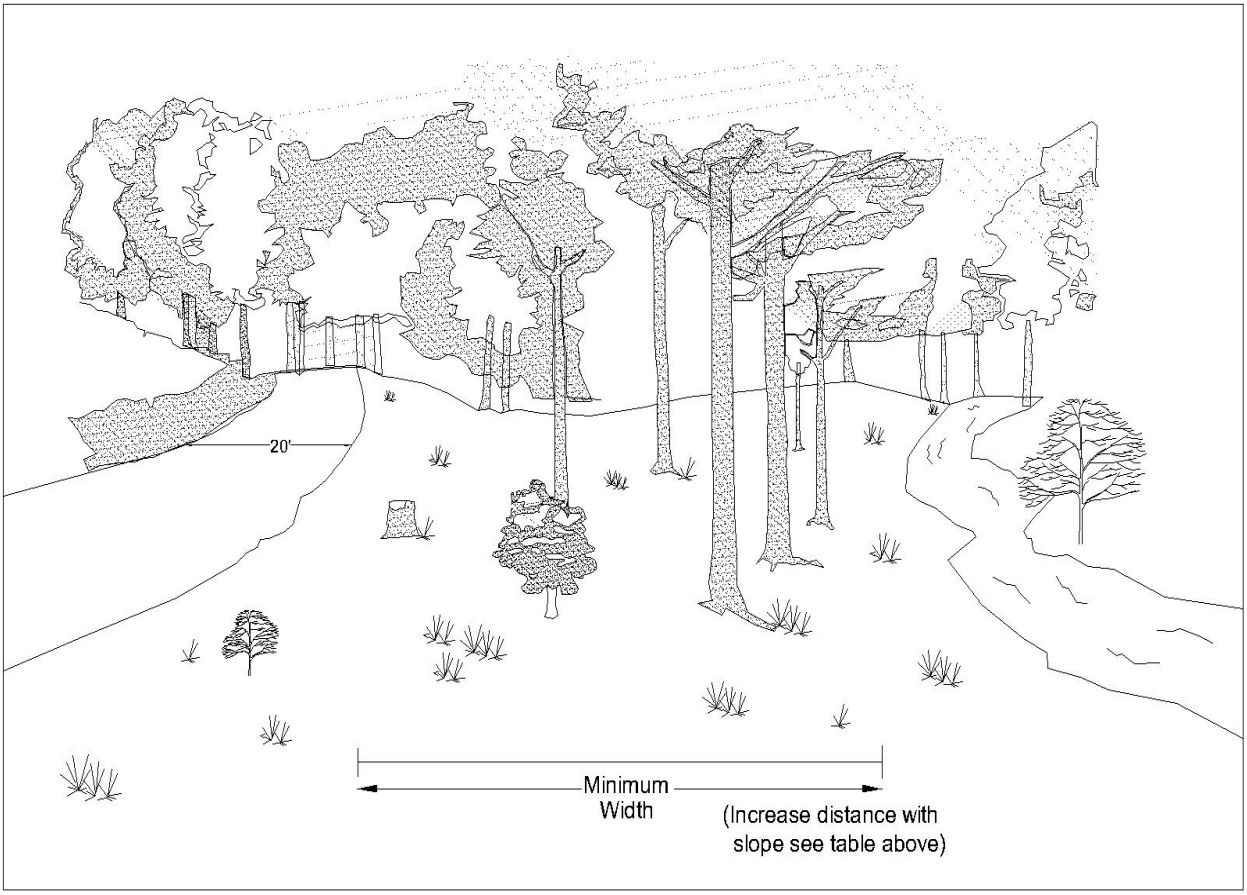
Filter strip widths by slope on land between roads and perennial streams.
The width of the filter strip depends on the slope between the road and the stream.

Will this BMP be used? ☐ Yes ☐ No

Slope of Land Between Road and Stream (%)	Minimum width of Filter Strip (feet) +
0	25++
10	45++
20	65
30	85
40	105
50	125
60	145
70	165

\+ Widths should be doubled when the harvesting activity is located where receiving waters have a designated use/existing use of High Quality or Exceptional Value or within a municipal water supply, source water area.

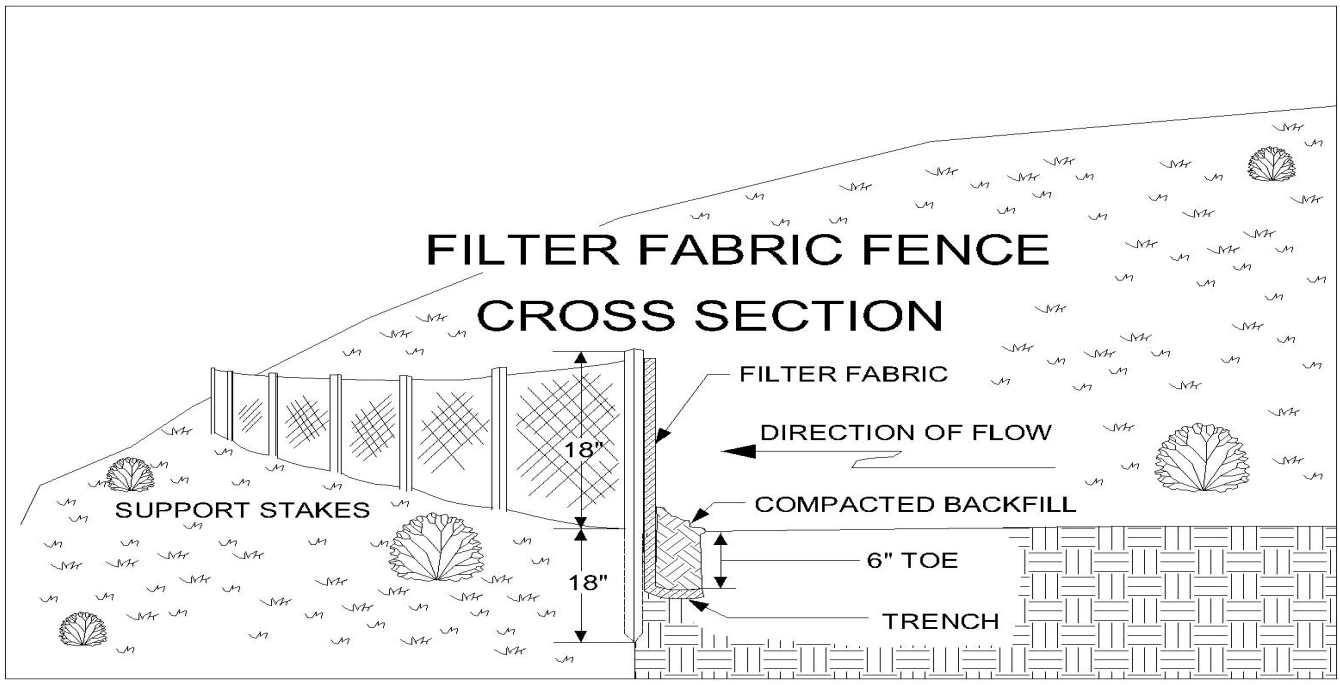
++ Earth disturbance 50 feet or less from a stream requires a water obstruction and encroachment permit from the appropriate DEP Regional Office, Soils and Waterways Section.

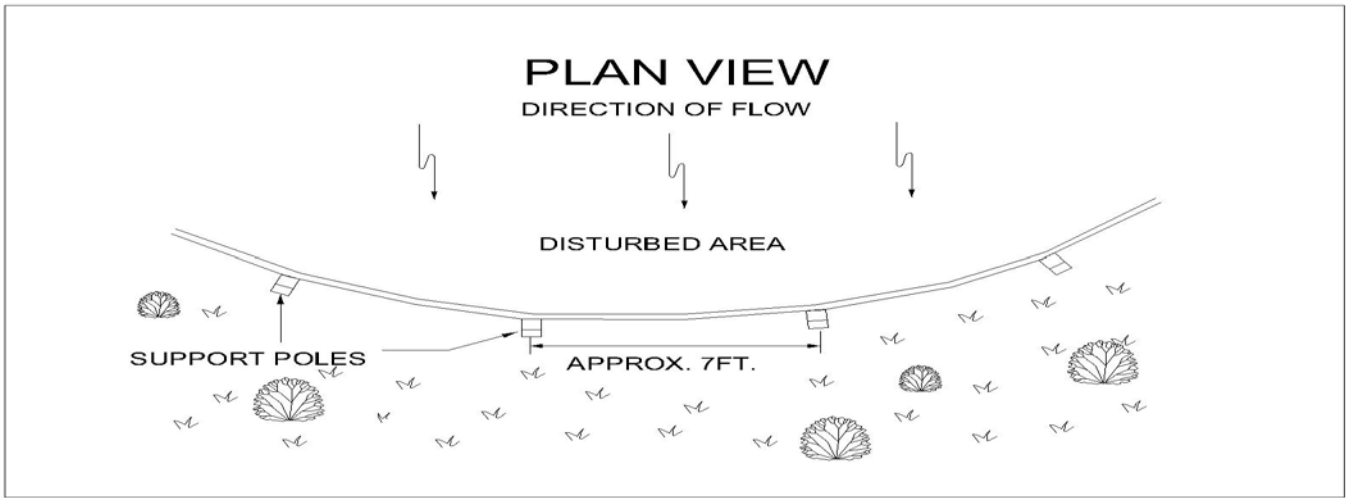


E. Filter Fabric Fence

Filter fabric fence must be installed on contour at the edge of disturbed areas. Both ends of each fence section must be extended upslope at 45 degrees to the main fence alignment. They should not be installed in streams, ditches or other areas of concentrated flow. Install filter fabric fence before the ground freezes.

Will this BMP be used? ☐ Yes ☐ No

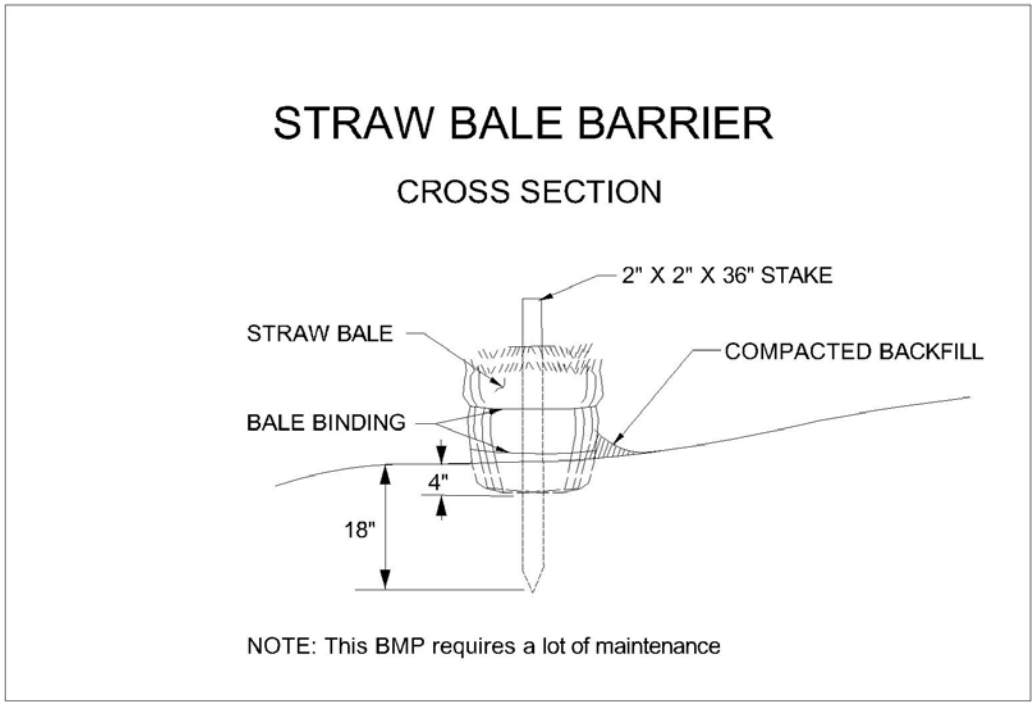


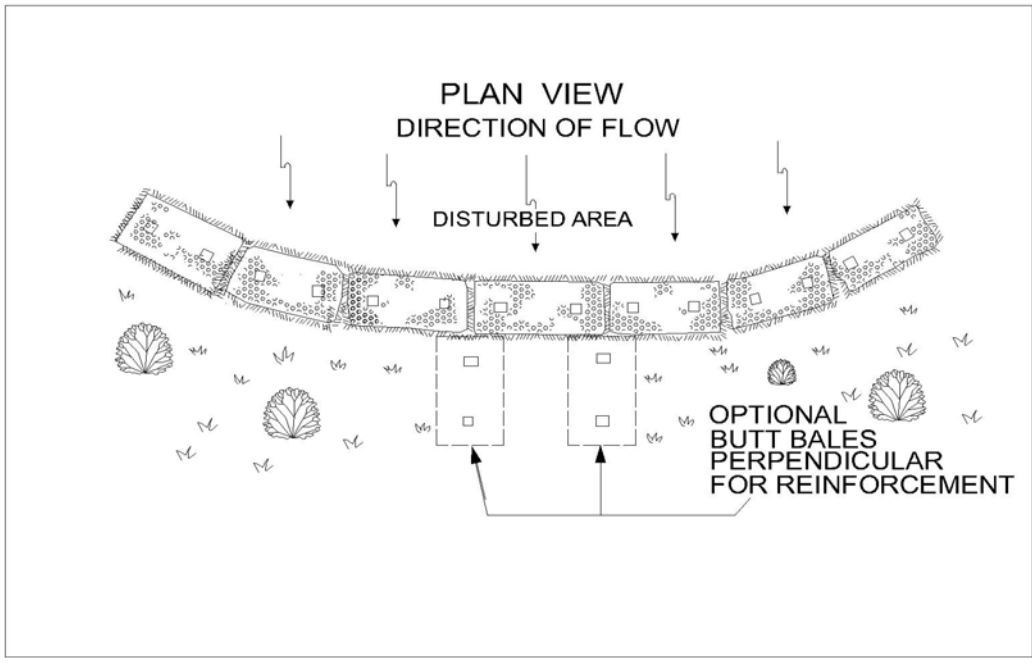


F. Straw Bale Barrier

Straw bale barriers shall be placed on contour at the edge of disturbed areas. Both ends of the barrier shall be extended upslope at 45 degrees to the main barrier alignment. Straw bales deteriorate and should be replaced every 3-4 months. They should not be installed in streams, ditches or other areas of concentrated flow.

Will this BMP be used? ☐ Yes ☐ No

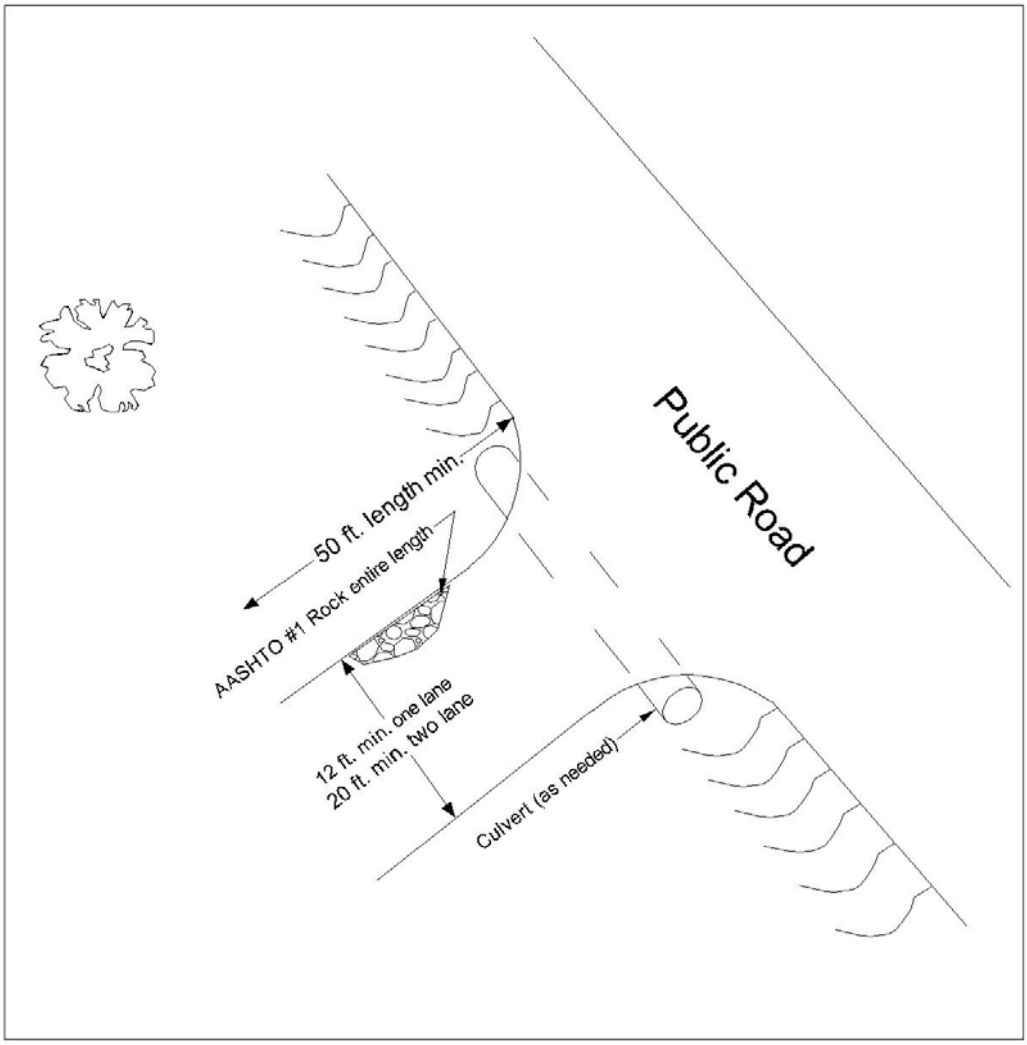


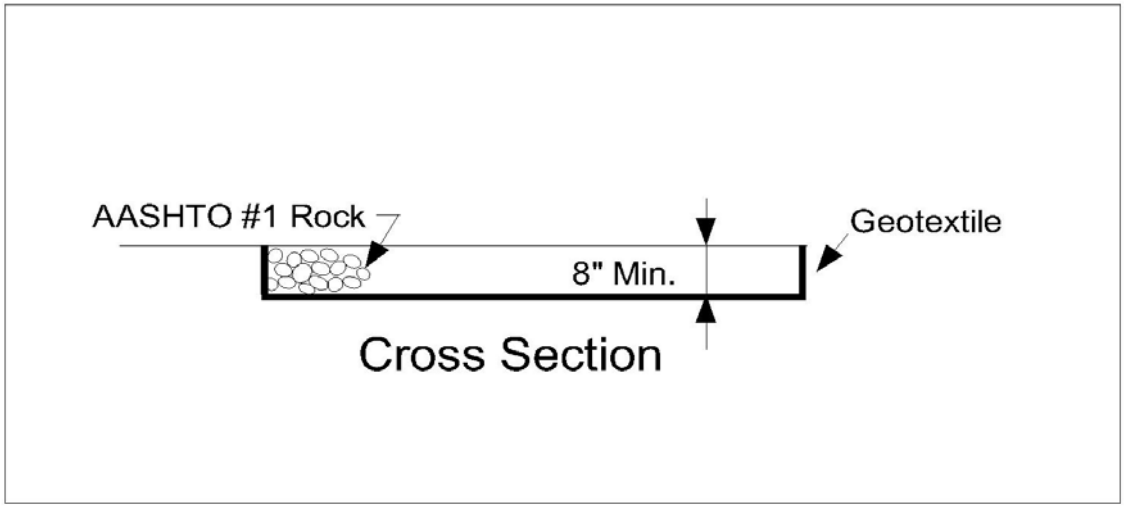


G. Stabilized Road Entrance

The purpose is to remove mud from tires and keep it off the road. Construction entrance shall be constantly maintained.

Will this BMP be used? ☐ Yes ☐ No





H. Disturbed Area Stabilization (check as appropriate)

	Seeding[4,5]	Natural Vegetation[5]
Log Landing[6]	☐	☐
Haul Roads[6]	☐	☐
Skid Roads[6]	☐	☐

Seed mix and seeding rate to be used on critical areas:

_____

Suggested Seeding Mixes for Landings, Roads and Critical Areas

Mixes	Seeding rate (lb/ acre)	Mixes	Seeding rate (lb/acre)
Permanent		**Temporary**	
a. Birdsfoot trefoil*	8	f. Spring oats	96 (3 bu)
Redtop	3	g. Winter wheat	180 (3 bu)
b. Creeping red fescue	30	h. Winter rye	168 (3 bu)
Perennial ryegrass	10	i. Annual rye	40
c. Birdsfoot trefoil	8		
Timothy	4		
d. White clover	1		
Kentucky bluegrass	6		
Timothy	2		
e. Annual ryegrass	10		
Redtop	10		
Birdsfoot trefoil	5		

*Recommended for somewhat poor and poorly drained soils in partial shade to full sunlight.

Note: Birdsfoot trefoil and white clover seed should be properly inoculated.

9. SCHEDULE AND SEQUENCE OF OPERATIONS

Will this schedule be used? ☐ Yes ☐ No If not, provide additional information in Section 12.

Starting Date _____ Completion Date _____

Pre-harvest: Necessary permits will be obtained. Erosion and sediment control BMPs will be installed as specified in this plan. Haul road, landings and skid roads will be constructed.

During harvest: Erosion and sediment control BMPs for haul roads, skid roads and landings shall be maintained. Tops, branches and slash will be removed from ponds, lakes and streams. This plan will be amended or revised to include other BMPs for special or unanticipated circumstances that may occur.

Post harvest: Smooth and reshape roads and landings. Remove culverts and crossings. Install permanent waterbars as specified in this plan. Critical areas will be seeded, fertilized, limed and mulched and garbage/trash removed from the area.

10. MAINTENANCE

BMPs will be inspected on a weekly basis and after each measurable rainfall event.

Culverts will be cleaned out, repaired or replaced as necessary.

Filter strips will be maintained and respected (timber may be harvested in filter strips).

Haul roads and skid roads will be repaired where signs of accelerated erosion are detected.

Seeding and mulching will be repeated in those areas that appear to be failing or have failed.

Other (describe)

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[4] Areas to be seeded may require fertilization and liming. Soil testing will provide individualized recommendations for given sites. Recommendations of 300 lbs. of 10-10-10 fertilizer per acre and 2,000 lbs. of lime per acre should be considered to ensure 70% vegetative cover. Seeded areas will be more successful when mulched with a minimum of 2.5 tons of straw or hay per acre. Describe mulching type and rate in Section 12 when used.

[5] Stabilization of disturbed areas is important. Disturbed areas shall be protected with such BMPs as straw bale barriers, filter fences, mulch, or filter strips, waterbars and other BMPs until vegetation is established. Critical areas such as: highly erodible soils, approaches to stream crossings and landings require establishment of permanent or temporary cover to ensure that erosion does not occur.

[6] Indicates treatments for individual landings, haul roads or sections, and skid roads identified on the map.

11. SITE CLEANUP

Describe procedures which ensure the proper handling, storage, control, disposal and recycling of timber harvesting materials and waste, including but not limited to fuels, oil, lubricants and other materials brought to the timber harvest site or used in the process of timber harvesting.

☐ Garbage, fuels or any substance harmful to human, aquatic or fish life, will be prevented from entering springs, streams, ponds, lakes, wetlands or any water course or water body.

☐ Oils, fuels, lubricants and coolants will be placed in suitable containers and disposed properly.

☐ All trash and garbage will be collected and disposed properly.

☐ Other (describe).

12. ADDITIONAL EXPLANATION/COMMENTS (if needed)